

**THE IMPACT OF RITE CARE
ON ADEQUACY OF PRENATAL CARE
AND THE HEALTH OF NEWBORNS**

2000 UPDATE

Prepared by:
Jane Griffin, MPH
MCH Evaluation, Inc.
April 2002

The Impact of Rlte Care on Adequacy of Prenatal Care
and the Health of Newborns - 2000 Update

This report updates the evaluation study tables and graphics from The Impact of Rlte Care on Adequacy of Prenatal Care and the Health of Newborns¹ with calendar year 2000 birth certificate data from the Office of Vital Statistics, Rhode Island Department of Health. There is now eight years of vital statistics data to trend these prenatal care utilization and birth outcome measures. The Rlte Care program uses this data to monitor several maternal and child health outcome measures from the birth certificate data to determine the effect of Rlte Care on access and adequacy of prenatal care and maternal and infant health status. This year a section on teen births has been added to help the Rlte Care program evaluate interventions designed for this population. This report describes and updates maternal and child health trends in the following four areas:

- **Access and adequacy of prenatal care** - month of entry into prenatal care, number of prenatal visits, and site of prenatal care
- **Maternal health status** - maternal cigarette and alcohol use, interbirth interval and cesarean birth
- **Newborn health status** - low birthweight, very low birthweight, prematurity, APGAR score, and neonatal intensive care unit stay
- **Teen Births** – access to prenatal care as measured by month of entry and number of visits, smoking status, and percent of repeat births

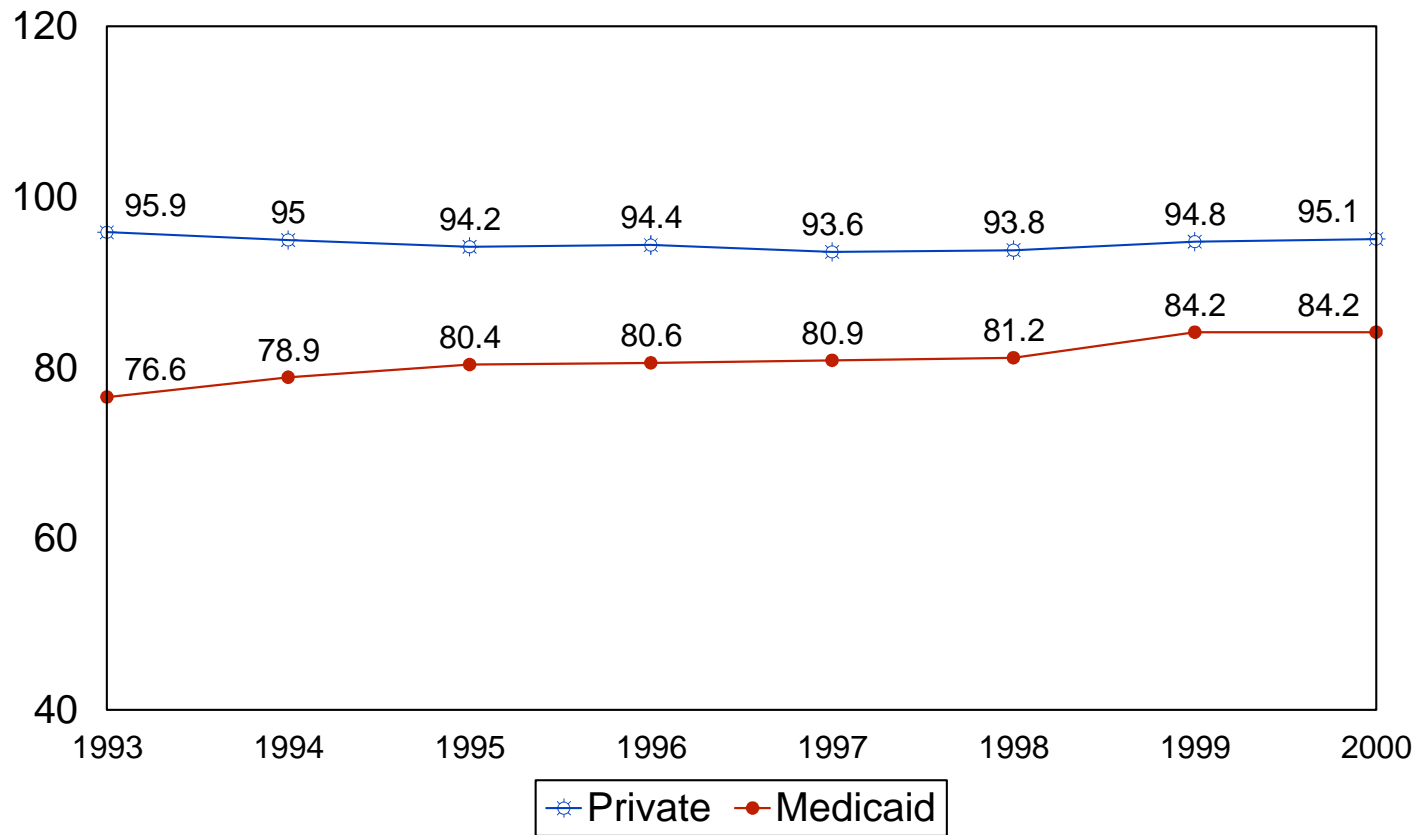
¹ Griffin J, Barrington, RI: MCH Evaluation, Inc., April 10, 1997

Access to Prenatal Care

Access to prenatal care has improved for pregnant women on Medicaid from 1993 to 2000. Figure 1 shows the percent of women who began prenatal care in the first trimester by insurance status. In 1993 76.6% of pregnant women on Medicaid began prenatal care in the first trimester; in 2000 the percent rose to 84.2%. The gap between privately insured women and publicly insured women on early entry into prenatal care was cut in half, from 19.3% in 1993 to 10.6% in 2000.

Table 1 shows that after implementation of Rlte Care access to private physicians' offices for pregnant women on Medicaid increased. In 1993 19.7% of pregnant women on Medicaid (i.e., one in five) received prenatal care at private physicians' offices. In 2000 34.5% of pregnant women on Medicaid (i.e., over one in three) received prenatal care at private physicians' offices.

Figure 1
Percent of Women who Began Prenatal Care
in First Trimester by Insurance Status 1993 - 2000



Data Source: Medicaid Research & Evaluation Project
Vital Statistics Birth File 1993-2000 - (n=99,665)

Table 1
Changes in Utilization of Prenatal Care for Medicaid Births from 1993-2000
(n=31,446)

	1993	1994	1995	1996	1997	1998	1999	2000
	(n=4598)	(n=4305)	(n=3510)	(n=3971)	(n=3619)	(n=3618)	(n=3554)	(n=4271)
Entry into Prenatal Care								
% 1st trimester	76.6	78.9	80.4	80.6	80.9	81.2	84.2	84.2
% 2nd trimester	19.9	18.1	16.8	16.9	15.9	16.2	13.5	14.0
% 3rd trimester	3.1	2.5	2.5	2.2	2.8	2.2	2.0	1.6
Number of Prenatal Visits								
% 0	0.5	0.5	0.3	0.4	0.4	0.3	0.2	0.3
% 1-6	10.0	8.6	5.9	5.1	5.4	4.6	4.9	5.5
% 7-9	15.3	15.0	12.7	12.9	12.2	12.7	10.2	11.0
% 10-12	50.0	48.1	52.4	52.2	49.5	48.9	52.5	46.8
% >= 13	24.3	27.8	28.7	29.5	32.5	33.5	32.2	36.4
Site of Prenatal Care								
% Private MD Office	19.7	21.7	31.1	33.9	29.1	30.7	33.7	34.5
% Hospital Clinic	40.7	41.8	31.0	28.1	26.6	27.2	23.5	27.3
% Community Health Center	37.0	31.7	27.6	29.8	36.1	33.8	33.7	32.9
% Staff HMO	1.0	0.9	2.9	2.7	4.7	4.6	4.4	0.9

Data Source = Vital Statistics Birth File, 1993-2000
Health Indicator Project, Rhode Island Department of Human Services

Adequacy of Prenatal Care

Adequacy of prenatal care² also continued to improve for women on private insurance and remained stable for women on Medicaid. Figure 2 shows that in 1993 only 57% of pregnant women on Medicaid received adequate prenatal care; in 2000 this percent rose to 73%. This improvement in adequacy is an increase of 28%. The gap between publicly and privately insured women also narrowed during this time period. In 1993 the gap was 15.5% and in 2000 the gap decreased to 10.2%.

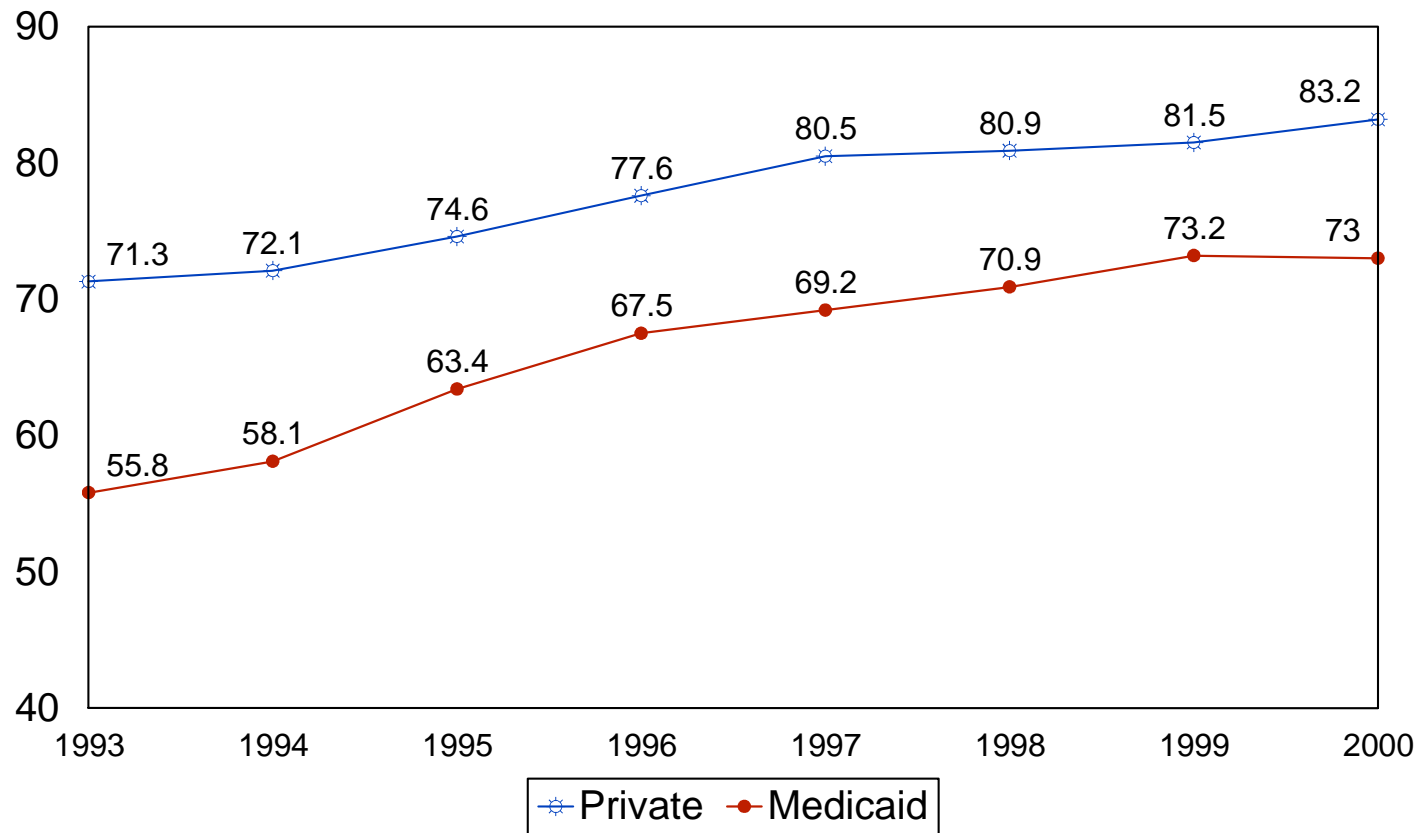
The greatest improvement in prenatal care during this time period was for women on Medicaid receiving adequate plus prenatal care. Table 2 shows that in 1993 11.1% of pregnant women on Medicaid received adequate plus prenatal care; by 2000 this rate had almost doubled to 21.6% of the pregnant women on Medicaid receiving adequate plus prenatal care.

A recent study in the American Journal of Public Health³ shows that this improvement in adequacy of prenatal care utilization for pregnant women on Medicaid was due to the RItE Care program. This improvement was due to specific program interventions that addressed and changed organizational and delivery system barriers to care.

² Adequacy of prenatal care - Kotelchuck Index defined on Table 2

³ Griffin J et al "The Effect of a Medicaid Managed Care on Prenatal Care Utilization in Rhode Island" American Journal of Public Health 89:497- 501,1999.

Figure 2
Percent of Women who Received Adequate/Adequate+
Prenatal Care by Insurance Status 1993 - 2000



Data Source: Medicaid Research & Evaluation Project
Vital Statistics Birth File 1993-2000 - (n=99,665)

<p>Table 2 Changes in Adequacy of Prenatal Care* for Medicaid Births 1993 - 2000 (n=31,446)</p>								
	1993	1994	1995	1996	1997	1998	1999	2000
	(N=4598)	(n=4305)	(n=3510)	(n=3971)	(n=3619)	(n=3618)	(n=3554)	(n=4271)
Adequacy of Prenatal Care*								
% Inadequate Care	15.8	15.0	11.9	11.0	11.0	9.8	9.6	9.6
% Intermediate Care	28.5	26.9	24.6	22.1	19.7	19.4	17.2	17.4
% Adequate Care	44.5	43.3	47.4	48.6	50.3	50.0	53.7	51.3
% Adequate Plus Care	11.3	14.8	16.0	18.9	18.9	20.9	19.5	21.6

Data Source = Vital Statistics Birth File, 1993- 2000
Medicaid Data Archive, RI Department of Human Services

* = Prenatal Care Adequacy measured using Kotelchuck Index:

Inadequate = Prenatal care begun after 4th month of pregnancy or less than 50% of recommended visits received.

Intermediate = Prenatal care begun by 4th month of pregnancy and 50-79% of recommended visits received.

Adequate = Prenatal care begun by the 4th month of pregnancy and 80-109% of recommended visits received.

Adequate Plus = Prenatal care begun by 4th month of pregnancy and 110% or more of recommended visits received.

Note: This index is calculated using three variables - month prenatal care began, prenatal visits and gestational age - on average 20% of the birth certificates are missing one or more of these variables

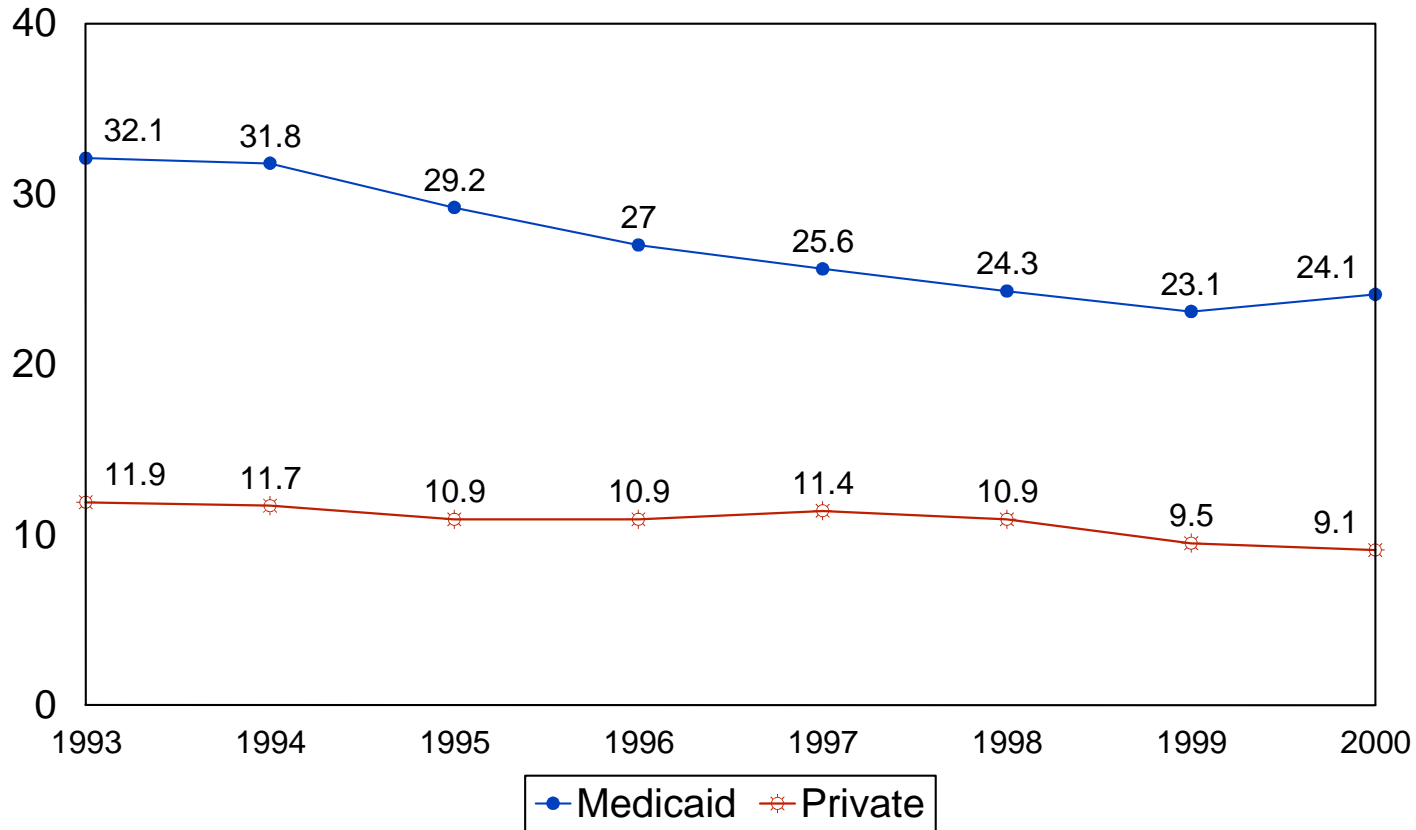
Maternal Health Status

The two principal maternal health status measures on the birth certificate are smoking during pregnancy and interbirth interval. Both of these indicators are major determinants of low birthweight.

Figure 3 shows that smoking rates raised slightly in 2000 for women on Medicaid. Table 3 shows that there continues to be a decline in the heavy smokers. In 1993 26% of the pregnant women on Medicaid who smoked, smoked 20 or more cigarettes a day; in 2000 this percent dropped almost in half to 14.6%. However, women on Medicaid are still 2.6 times more likely to smoke during pregnancy than women on private insurance.

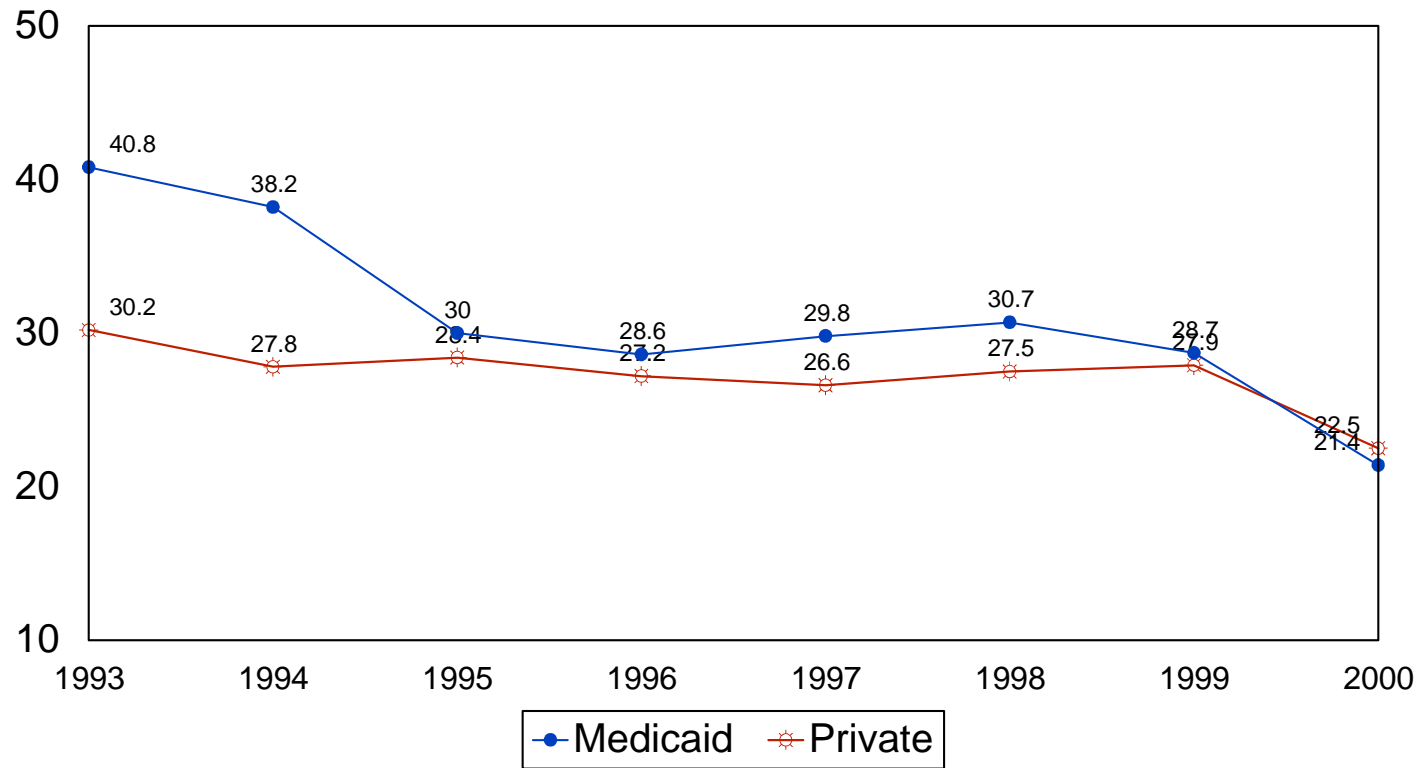
Figure 4 shows the dramatic improvement in the interbirth interval for mothers on Medicaid. There was almost a 50% reduction from 1993 to 2000. In 1993 (i.e., pre-Rite Care), 40.8% of mothers on Medicaid had a short interval between births; in 2000 (i.e., post-Rite Care), this rate declined almost in half to 21.3%. 2000 was the first year that mothers on Medicaid measured better on this health outcome than privately insured women.

Figure 3
Percent of Pregnant Women who Smoke Cigarettes*
by Insurance Status 1993 - 2000



Data Source: Medicaid Research & Evaluation Project
Vital Statistics Birth File 1993-2000 - (n=99,665)

Figure 4
Percent of Women with Short Interval
Births (< 18 Months) by Insurance Status 1993 - 2000



Data Source: Medicaid Research & Evaluation Project
Vital Statistics Birth File 1993-2000 - (n=99,665)

Table 3
Changes in Maternal Health Status for Medicaid Births from 1993-2000
(n=31,446)

	1993	1994	1995	1996	1997	1998	1999	2000
	(n=4598)	(n=4305)	(n=3510)	(n=3971)	(n=3619)	(n=3618)	(n=3554)	(n=4271)
% Smoke Cigarettes	32.1	31.8	29.2	27.1	25.6	24.3	23.1	24.1
Cigarettes per day								
% 1-9	33.8	37.4	38.3	40.4	43.4	41.5	44.8	48.8
% 10-19	39.7	39.5	40.5	39.5	36.2	39.5	39.5	36.6
% >=20	26.4	23.1	21.2	20.1	20.5	19.0	15.7	14.6
% Drinks alcohol	2.5	2.4	1.8	1.2	1.4	1.7	1.0	1.2
% Interbirth Interval <18 mos*	40.9	38.2	30.0	28.6	29.8	30.7	28.7	21.3
% Cesarean birth	15.2	14.7	17.1	16.1	15.7	18.2	18.3	19.8

Data Source = Vital Statistics Birth File, 1993-2000
Medicaid Data Archive, RI Department of Human Services

* Interbirth interval is calculated using both LMP and date of last delivery -
on average 15% of the birth certificates are missing one or both of these variables.

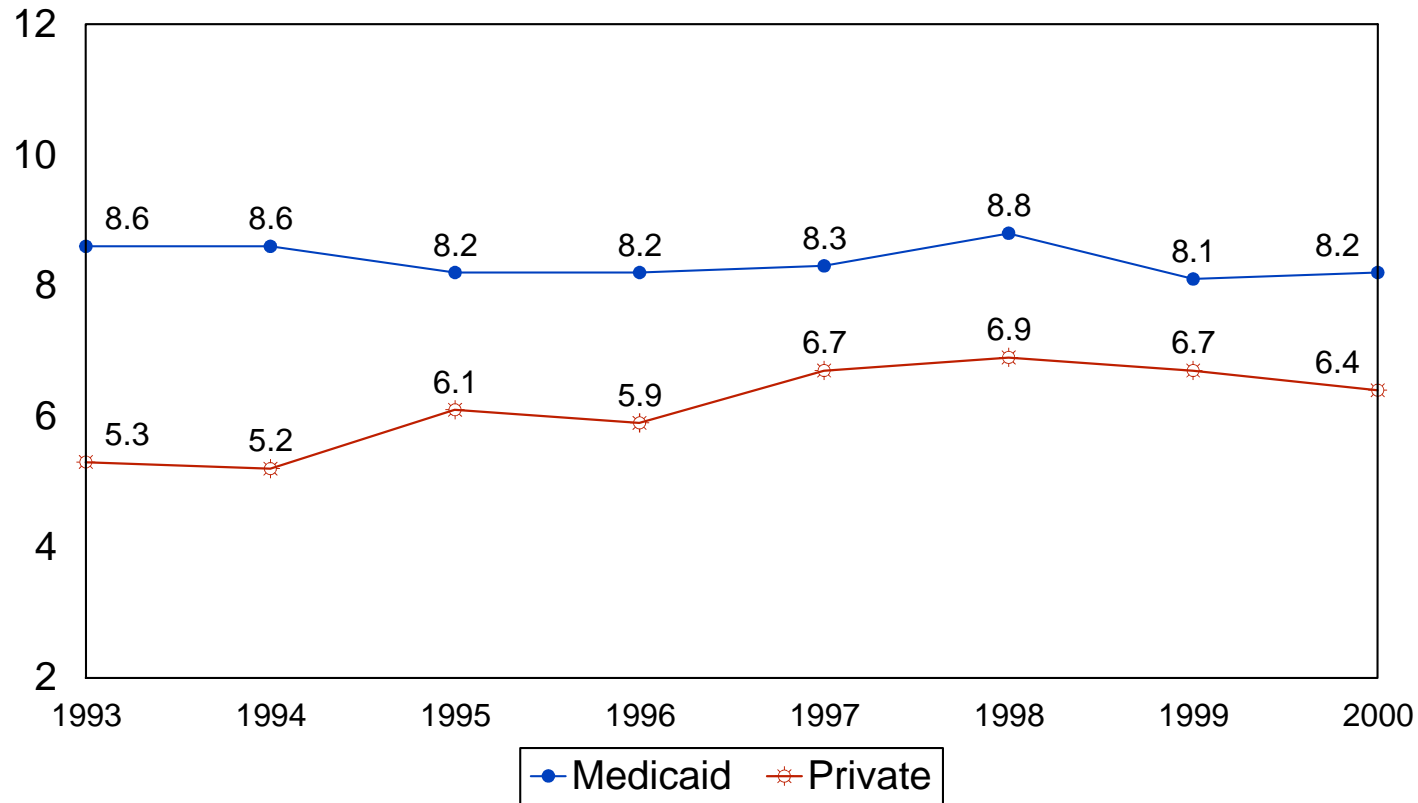
Newborn Health Status

The three major newborn health status measures being tracked from the birth certificate are low birthweight, prematurity and neonatal intensive care unit (NICU) admission.

Figure 5 shows that in 2000 low birthweight remained stable for newborns on Medicaid. In 1993, the low birthweight rate for Medicaid newborns was 8.6%; in 2000, this rate had declined slightly to 8.2%. During this same time period the prematurity rate for newborns on Medicaid raised from 7.7% to 9.4%.

NICU admission for newborns on Medicaid rose again in 2000. This increase probably reflects the higher rate of prematurity in 2000. Table 4 shows that in 1993 the NICU admission rate for newborns on Medicaid was 3.2%, in 2000, the NICU admission rate was 5.1%. NICU admissions for infants on Medicaid have increased by 59% since 1993.

Figure 5
Percent Low Birthweight
by Insurance Status 1993 - 2000



Data Source: Medicaid Research & Evaluation Project
Vital Statistics Birth File 1993-2000 - (n=99,665)

<p>Table 4 Changes in Newborn Health Status for Medicaid Births 1993-2000 (n=31,446)</p>								
	1993	1994	1995	1996	1997	1998	1999	2000
	(n=4598)	(n=4305)	(n=3510)	(n=3971)	(n=3619)	(n=3618)	(n=3554)	(n=4271)
% VLBW (<1500 grams)	1.9	1.3	1.1	1.2	1.3	1.6	1.5	1.7
% LBW (< 2500 grams)	8.6	8.6	8.2	8.2	8.3	8.8	8.1	8.2
% Premature (<37 wks)	7.7	8.3	6.8	8.2	7.5	8.8	8.8	9.4
% APGAR @ 5min <=6	2.5	2.1	1.9	2.6	2.3	2.4	2.0	2.2
% Stayed in NICU	3.2	4.0	3.4	3.3	3.3	3.6	4.2	5.1
NICU Length of stay	(n=147)	(n=165)	(n=117)	(n=132)	(n=120)	(n=131)	(n=150)	(n=167)
%1-3 days	50.4	44.3	46.3	61.5	60.9	66.0	61.0	51.5
%4-7 days	9.9	20.5	22.4	17.9	17.2	15.5	13.0	15.0
%8-30 days	28.1	20.5	20.9	12.8	16.1	13.4	18.0	20.4
% >30	11.6	14.8	10.4	7.7	5.7	5.2	8.0	13.2

Data Source = Vital Statistics Birth File, Office of Health Statistics,
RI Department of Health 1993-2000
Medicaid Data Archive, RI Department of Human Services

Teen Births

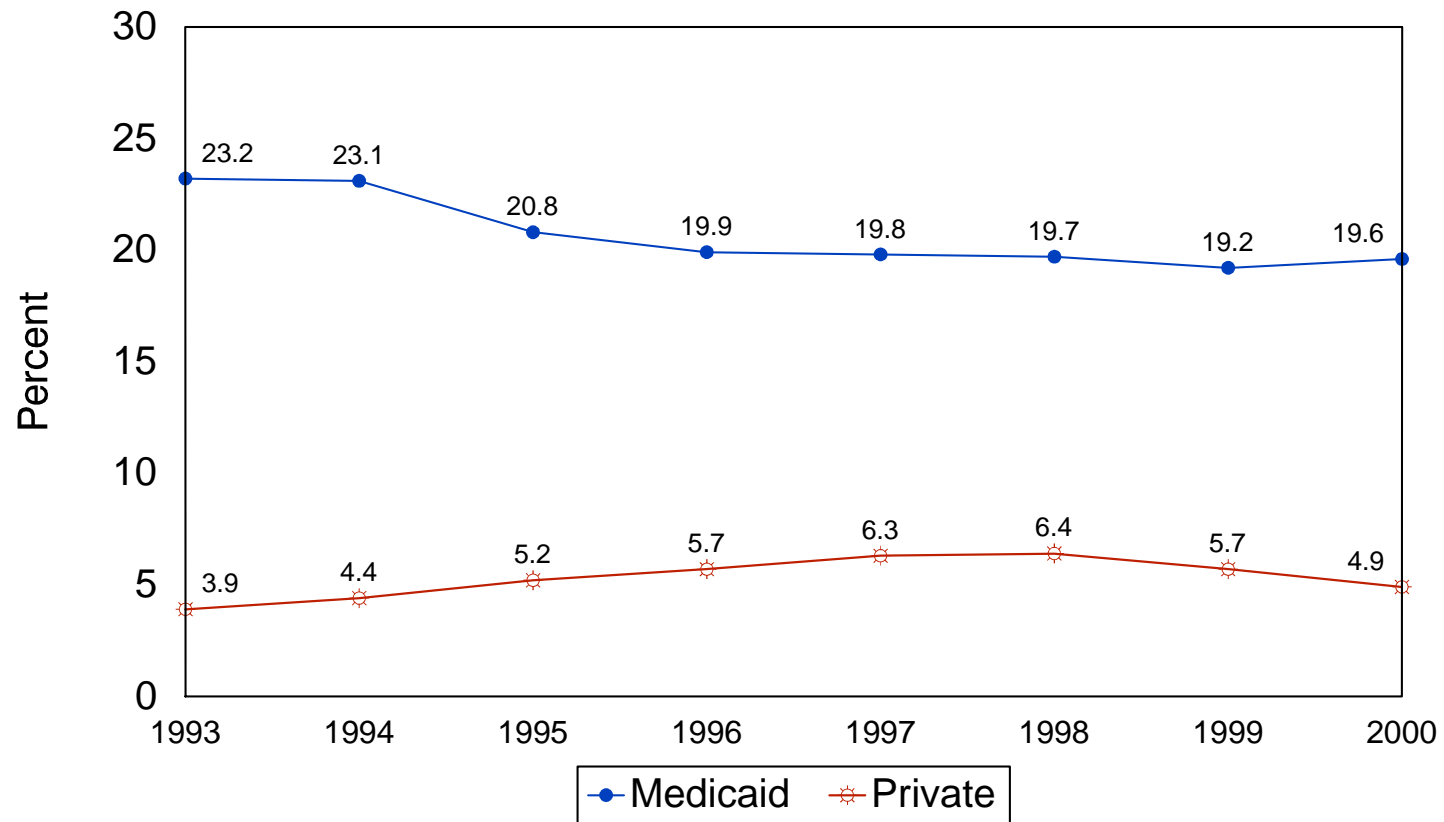
The teen birth rate is four times higher among Medicaid recipients than the privately insured. Figure 6 shows that one in five Medicaid births are to a teen compared to one in twenty private births. These rates have remained consistent during the 1990s.

Figure 7 and 8 show that in 2000 teens were beginning prenatal care earlier, however their adequacy of care (as measured by recommended visits) declined slightly. In 1999 almost 72% of pregnant teens on Medicaid received adequate prenatal care and in 2000 this percent dropped to 69%.

The rate of cigarette smoking continued to decline for pregnant teens on Medicaid. Figure 10 shows that in 1993 25% of pregnant teens on Medicaid smoked. In 2000 this rate dropped to 21%.

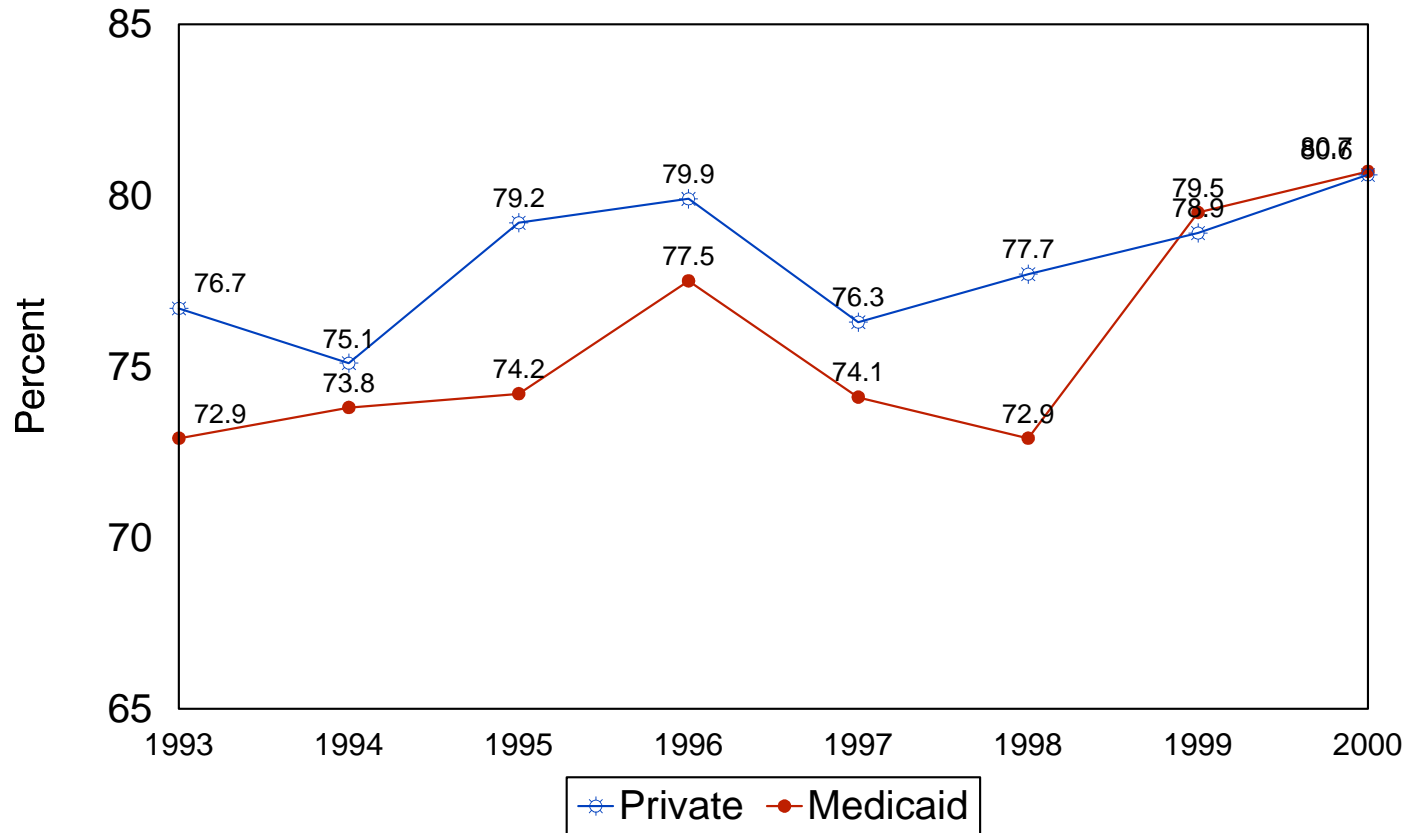
Figure 10 shows that rate of second time mothers is higher for teens on Medicaid than teens on private insurance. One in four births to teens on Medicaid is to someone who is already a mother. This rate of 25% has been consistent throughout the 1990s.

Figure 6
Percent of Total Births to Teenagers
by Insurance Status 1993 - 2000



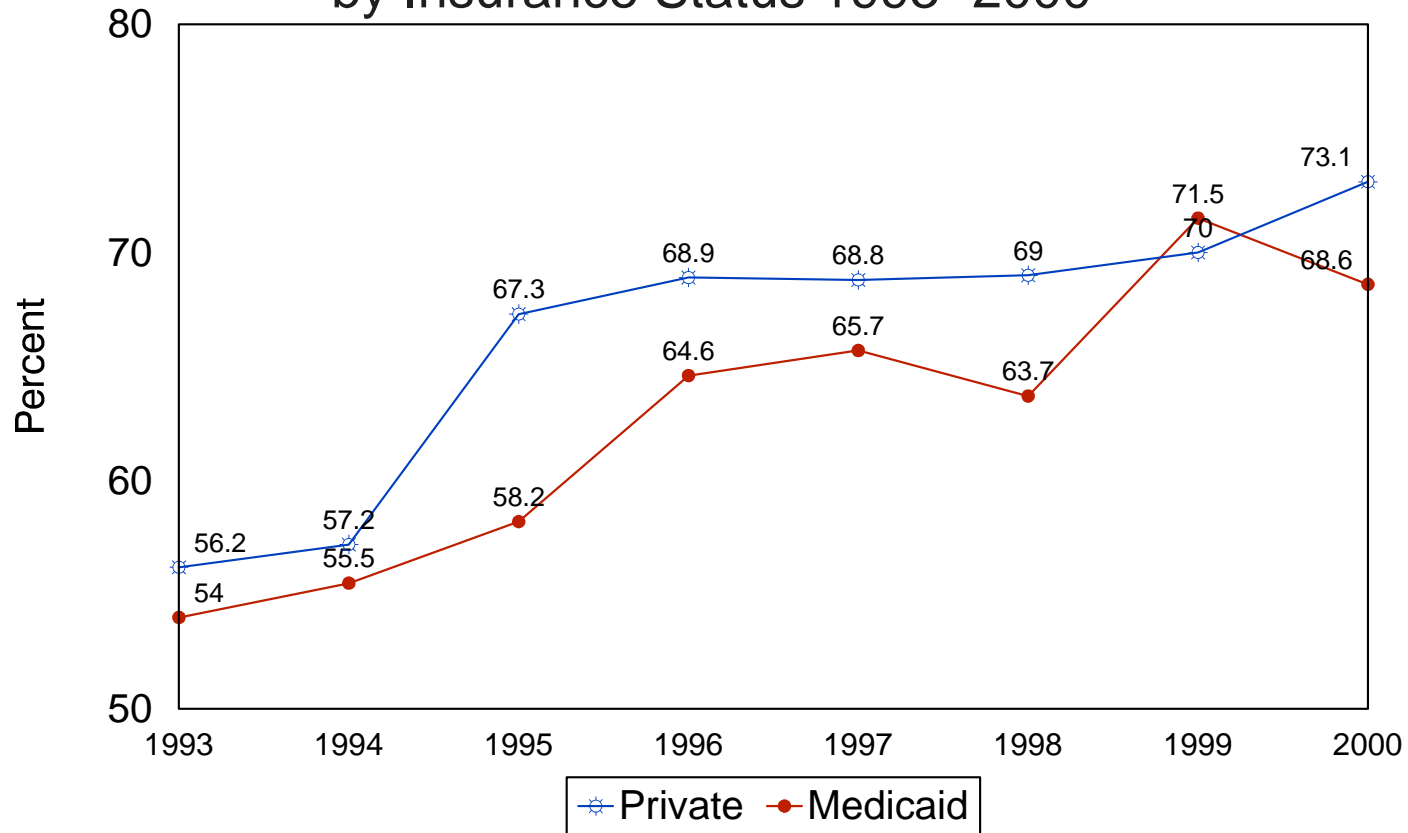
Data Source: Medicaid Research and Evaluation Project
Vital Statistics Birth File - RI Births to women <20 years old (n = 10,519)

Figure 7
Percent of Pregnant Teenagers who Began Prenatal Care
in First Trimester by Insurance Status 1993 - 2000



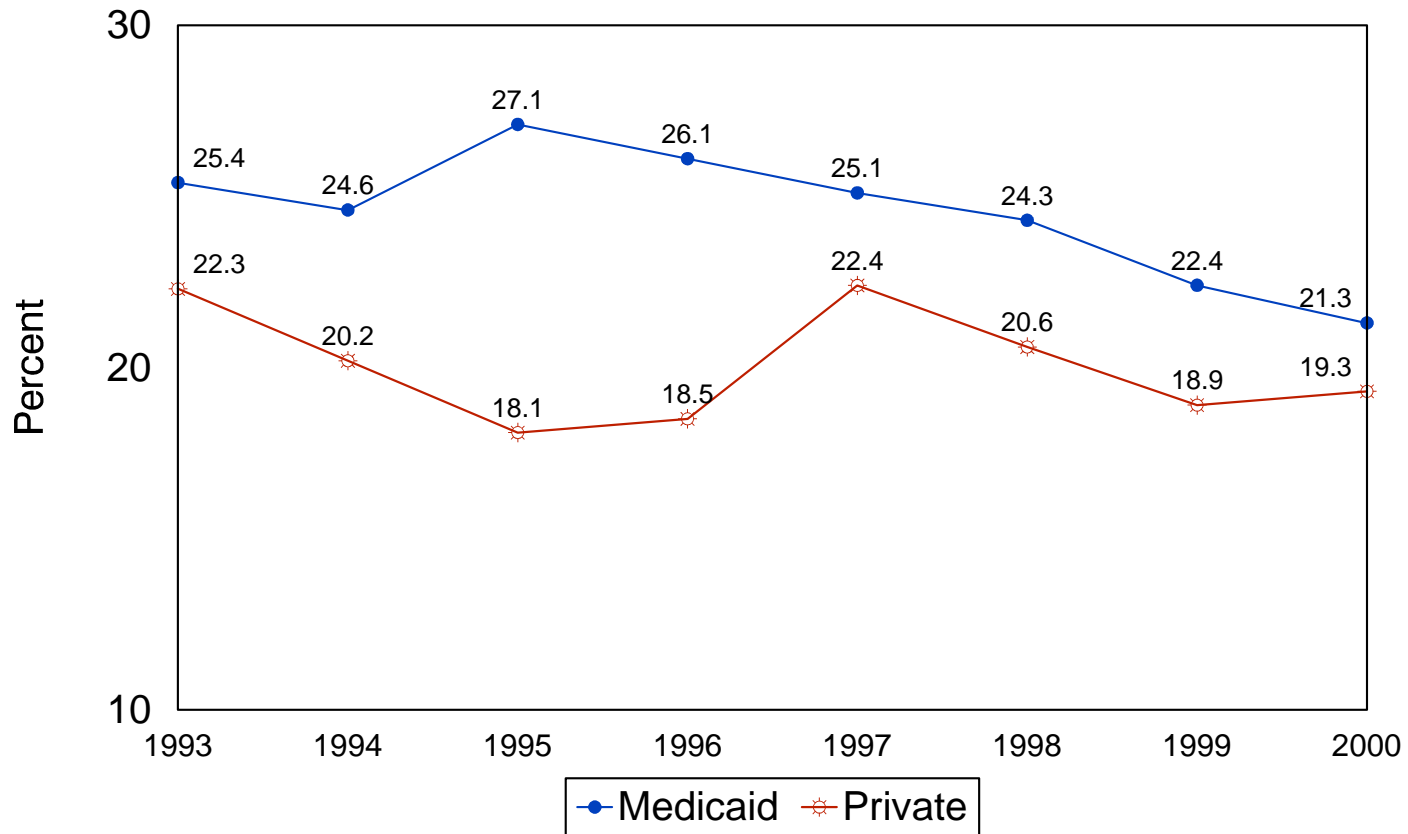
Data Source: Medicaid Research and Evaluation Project
Vital Statistics Birth File - RI Births to women <20 years old (n = 10,519)

Figure 8
Percent of Pregnant Teenagers who Received
Adequate/Adequate+ Prenatal Care
by Insurance Status 1993 -2000



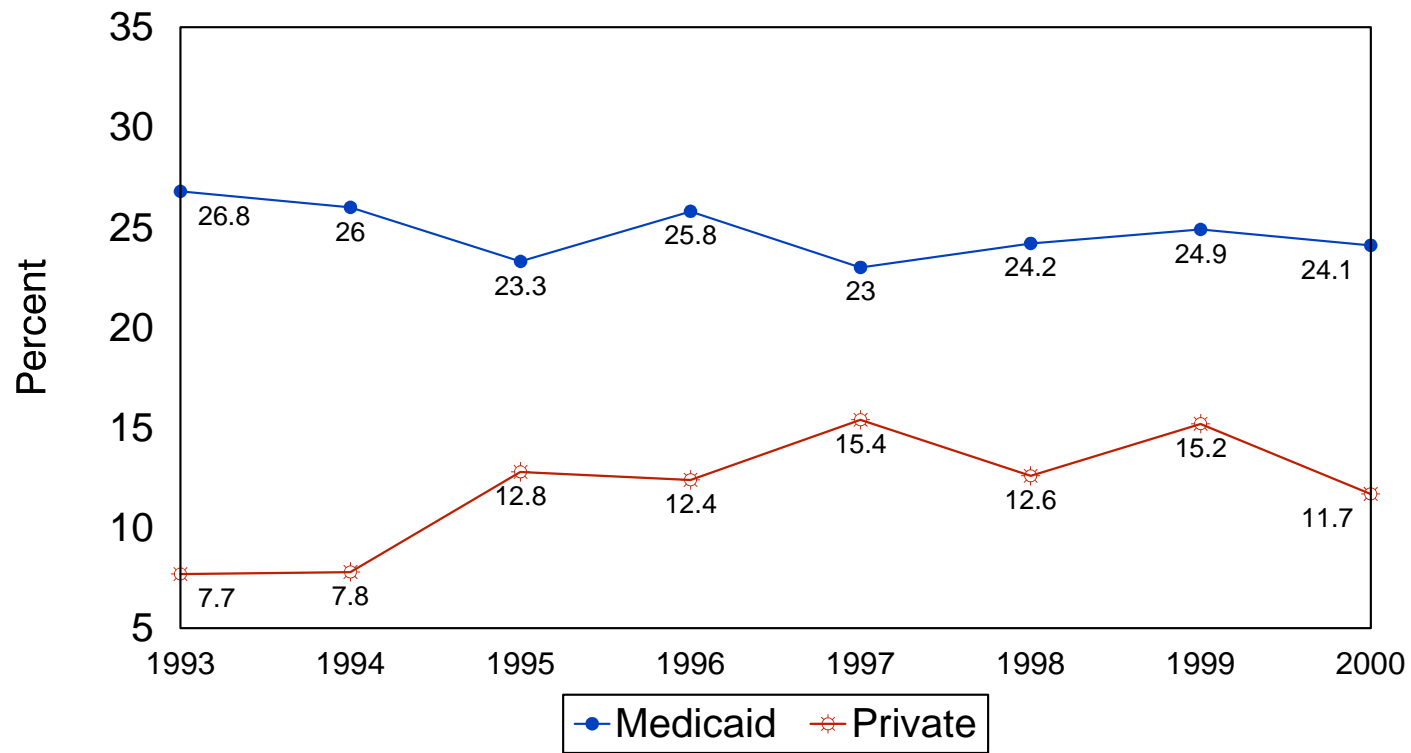
Data Source: Medicaid Research and Evaluation Project
Vital Statistics Birth File - RI Births to women <20 years old (n =10,519)

Figure 9
Percent of Pregnant Teenagers who Smoke Cigarettes*
by Insurance Status 1993 - 2000



Data Source: Medicaid Research and Evaluation Project
Vital Statistics Birth File - RI Births to women <20 years old (n = 10,519)

Figure 10
Percent of Teen Mothers with Previous
Live Births by Insurance Status 1993 -2000



Data Source: Medicaid Research and Evaluation Project
Vital Statistics Birth File - RI Births to women <20 years old (n = 10,519)